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SPECIFICATION FOR E.E.N.T. (EYE, EAR, NOSE AND THROAT) DIAGNOSTIC SET

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SPECIFICATION FOR E.E.N.T. (EYE, EAR, NOSE AND THROAT) DIAGNOSTIC SET

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(*Continued from page* 1)

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(*Continued on page* 8)

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Indian Standard

SPECIFICATION FOR E.E.N.T. (EYE, EAR, NOSE AND THROAT) DIAGNOSTIC SET

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 21 June 1973, after the draft finalized by the Optical and Mathematical Instruments Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 Diagnostic set is a set of four diagnostic medical instruments, namely, auriscope, ophthalmoscope, laryngeal assembly and nasal speculum, used for examination of the ear, eye, throat and nose respectively.

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1. SCOPE

1.1 This standard covers general and functional requirements of diagnostic set.

2. TERMINOLOGY

2.0 For the purposes of this standard, the definitions given in IS: 5140-1969* and the following definitions shall apply.

2.1 Nasal Speculum — A component with an adjustable opening to be fitted on to the otoscope head for visual examination of nose.

2.2 Laryngeal Rod — A curved tube provided with illuminating arrangement to be fitted on to the cell container.

2.3 Laryngeal and Post Nasal Mirrors — These are plane mirrors fitted on the laryngeal rod.

2.4 Tongue Depresser — A plate slightly bent at the tip to facilitate depression of tongue.

*Specification for auriscope.

2.5 Ophthalmoscope — An eye examination device carrying 23 miniature lenses of powers between −20 to +20D, provided with an illuminating arrangement, such as prism to send a divergent beam of light and a hole for viewing purposes.

3. GENERAL REQUIREMENTS

3.1 Each part of the diagnostic set shall be made of brass conforming to IS : 319-1968* and shall be hand chrome plated.

3.1.1 Coating and plating on each part shall be durable to resist discolouration, wear and corrosion.

3.1.2 All brass components shall be nickel and chromium plated, and aluminium parts anodized and dyed black. Nickel and chromium plating shall conform to Grade 3 of IS : 4827-1968† and anodizing to IS : 1868-1968‡.

3.2 The dimensions of the threaded and mating portions shall be such as to ensure interchangeability of spare parts.

3.3 The contact pins of ophthalmoscope, otoscope head and laryngeal rod shall fit snugly into the socket of cell containers. The cells used shall conform to IS : 203-1963§.

3.4 The tongue depresser, laryngeal mirror and post nasal mirror shall have a close slide fit with the laryngeal rod. These shall fit smoothly without application of much pressure.

3.5 The optical parts shall be clear of fog and moulds and shall conform to IS : 988-1959‖.

3.6 All sharp edges shall be removed.

3.7 The case for the instrument shall be made of any suitable material. The case shall be properly lined and cushioned internally. It shall be so designed when the instrument, cells and spares are kept in position in their pockets and the lid closed, there shall be no rattling inside the case.

4. FUNCTIONAL REQUIREMENTS

4.0 The essential parts of the instrument shall meet the following requirements.

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*Specification for free-cutting brass rods and sections (*second revision*).

†Specification for electroplated coatings of nickel and chromium on copper and copper alloys.

‡Specification for anodic coatings on aluminium (*first revision*).

§Specification for dry batteries for flashlights (*second revision*).

‖General requirements for optical components.

4.1 Auriscope — The auriscope shall conform to the requirements stipulated in IS : 5140-1969*.

4.2 Nasal Speculum — This shall be push fit in the otoscope holder. Its jaws shall be opened and closed smoothly by using the knob provided without any tendency to stick or slip.

4.3 Laryngeal Rod Assembly

4.3.1 The laryngeal and post nasal mirrors when spun over in their respective cells shall be waterproof.

4.3.2 The silvering of mirrors shall conform to IS : 988-1959†.

4.3.3 The lamp used shall have lensatic action at the tip of the glass and shall conform to IS : 5140-1969*.

4.4 Ophthalmic Head Assembly

4.4.1 The focal length of the lenses shall not vary by more than ±5 percent.

4.4.2 The lens housing shall take up the dioptric lenses suitably without any appreciable play. The lenses shall have positive powers of 0·5, 1, 1·5, 2, 3, 4, 6, 8, 10, 12, 15 and 20 dioptres and negative powers of 1, 1·5, 2, 3, 4, 5, 6, 8, 10, 15 and 20 dioptres.

4.4.3 The dioptric powers shall be marked in two different colours; red for positive powers and white for negative powers.

4.4.4 Opening of the lens housing and dioptric lenses shall be in perfect alignment.

4.4.5 The rotation of the lens housing plate shall be easy and smooth and the plate shall be held in a desired position without any tendency to slip even after slight jerk.

4.4.6 The lamp holder assembly shall have a close running fit with the carrier tube.

4.4.7 The position of condenser lens and the bulb provided in the ophthalmoscope shall be such as to send parallel beam of light to the lens fixed with the prism.

4.4.8 The emergent beam of light from the prism shall be divergent circular and of uniform intensity and shall have no shadow when seen through the dioptric lenses.

*Specification for auriscope.
†General requirements for optical components.

4.4.9 The angle of divergence of the beam shall not be less than 40°.

4.4.10 The lamp used in the ophthalmoscope shall be of 2·5 V, 0·3 A and shall conform to IS : 5140-1969* but without a lensatic tip.

5. SPARES

5.1 Three spare lamps (one each for otoscope head, laryngeal rod and ophthalmoscope) shall be supplied with the set.

6. TESTS

6.1 The diagnostic set shall initially be examined for the following external defects:

a) Loose, missing or damaged screws;

b) Scratched, broken or dirty optical surface;

c) Damage to the cell container, otoscope head, etc; and

d) Damage to external finish.

6.2 The auriscope assembly shall be tested in accordance with IS : 5140-1969*.

6.3 The contact pins of ophthalmoscope otoscope head and laryngeal rod, when fitted on to the top cap of the cell container, shall not show any flickering of light at the 'ON' position of the wiper.

6.4 The prism holder of ophthalmoscope shall not obstruct the opening of lens carrier and the dioptric lenses, and there shall be no obstruction of vision by the prism holder.

6.5 The lens housing plate shall be set for different powers and few jerks shall be given to the ophthalmoscope. The lenses shall not be displaced from the set position.

6.6 Each housing of the lens holder shall have correct lens in it. Their powers shall be tested with the help of dioptometer. They shall not vary by more than ±5 percent of the stipulated value.

6.7 Surface finish of the lenses shall not show any streaks, pits, scratches and greyness.

6.8 The emergent patch from the prism shall be circular throughout; this shall be ensured by measuring the diameter of the patch received on a ground glass screen. Measuring the diameter of the patch and the distance between the prism and the screen, the angle of divergence of beam shall be calculated. The calculated value shall not be less than 40°.

*Specification for auriscope.

7. MARKING

7.1 Each diagnostic set shall be marked with the nomenclature of the store, initials or trade-mark of the manufacturer and the year of manufacture, if required.

7.1.1 Diagnostic set may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked porducts are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

8. PACKING

8.1 The instrument with its shares shall be suitably packed in its case.

(*Continued from page 2*)

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